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[THE EDITOR.]

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EMPLOYMENT IN THE UNITED KINGDOM DURING AND AFTER THE TRANSITION PERIOD

How long will be the transition period after the end of the war in Europe during which man-power will be too scarce to meet all the demands for industrial reconstruction and domestic restocking ? And what will happen, when this reservoir of piled-up reconstruction demand has been exhausted; will Great Britain suffer a post-war slump or can we expect that the economy will run near to full employment with a moderate level of taxation and a balanced budget ?

These are the two questions to which Mr. Kalecki seeks to give an answer in the following article. As the reconstruction period in this country is likely to be lengthy—it may well be more than six years—this means looking ahead into the 1950's. *But to anticipate the economic development of a country amidst a troubled world over so many years may appear to be a very risky undertaking. It is therefore important to understand the nature of such economic forecasts. They are "conditional forecasts" and are based upon two sets of assumptions: those derived from estimates of facts*[1] *and trends and those dependent on future economic policy. The former determine broadly orders of magnitude, the latter are necessarily*

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[1] This article was with the printer when the White Paper (Cmd. 6564) on the War Effort of the U.K. was published. The information contained therein could, therefore, not be utilised, but a preliminary check showed that the factual assumptions made here are not inconsistent with the data given in the White Paper.

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conjectural. The validity of the predictions depends upon the degree to which the basic assumptions will be fulfilled in actual fact. But the "economic model" constructed on these foundations retains its value even if either the factual or the policy assumptions are modified. The reader is free to substitute what he regards as more plausible assumptions, and to trace the effect such modifications would have on the working and structure of the model. In fact, the model itself operates with variants, i.e. with alternative assumptions in various parts.

The main results which Mr. Kalecki derives from his set of assumptions are:—

- (*a*) *That the transition period in Great Britain will last for more than six years, i.e. into the early fifties, and thus be very much longer than that of the United States, estimated in a similar way by Mr. Steindl in a previous Bulletin at two or three years;*
- (*b*) *That at the end of this period the aftermath of the war will not only have been completely overcome, but also the standard of living of all classes of the community will be considerably higher than it was before the outbreak of war, if full employment is maintained:*
- (*c*) *That public spending to ensure full employment will roughly balance with public revenue, if taxation on higher incomes were raised to midway between the pre-war rate and the war-time rate, while the burden of taxation on the lower incomes were, broadly speaking, kept unchanged;*
- (*d*) *That Britain's export problem, though serious in a period of full employment at home and, possibly, instability abroad, may cause a relative reduction in the standard of living but will leave it still higher than before the war.*

THE EDITOR.

I. SUPPLY AND DEMAND FOR LABOUR IN THE TRANSITION PERIOD

In the first part of this article we attempt to estimate, on certain assumptions, the length of the transition period after the end of the European war, i.e. of the period in which labour will be scarce and hence the retention of many war-time controls, in particular of rationing and price control of commodities in short supply, will be necessary.[1] In the second part we estimate the conditions which are necessary for maintaining full employment after that period. The assumptions which will be made are of two types: (*a*) Assumptions of factual character, for instance, about the rate of technical progress during and after the war, about the duration of the Japanese war etc. (*b*) Assumptions about Government policy. These will be not based on speculations about the most likely Government policy; policies will be assumed which seem to us reasonable from an economic and social point of view, though not of a type that would seem very improbable. For instance, it will be assumed that the rate of income tax at the end of the transition period will be 8/- in the £. This may not be the most likely Government policy; on the other hand, this rate, being approximately half way between the pre-war and present rate of income tax, cannot be considered out of the question.

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[1] *Cf.* White Paper on *Employment Policy*, Cmd. 6527, pp. 6—10.

Owing to the hypothetical character of our assumptions and the precariousness and scantiness of the statistical data on which our estimates are based (so that at nearly every step of our calculation assumptions of type (*a*) must be made), our results will of course be conjectural. Our aim is not to make forecasts but to present a model of the post-war development of employment and output. Nevertheless some of our estimates may shed light upon the order of magnitude of the quantities involved. We obtain, for instance, between 6 and 7 years for the duration of the transition period ; although this figure is to a great extent conjectural, the actual length of the period is unlikely to be below 5 years or to exceed 8 years.

We assume that the transition period begins about the middle of 1945. The calculation of the length of the transition period is a simple form of the method of successive approximation. That is to say, we first make a guess as to the length of the period, and on the basis of this guess we calculate how long the period would be. As it turns out the agreement between the original guess, 6 years, and the calculated result, between 6 and 7 years, is sufficiently close to make a further calculation unnecessary.[1]

SUPPLY OF LABOUR

THE MAN-POWER POSITION.

We begin our calculation by estimating the man-power position during the 6-year period following the middle of 1945. Let us first consider what will be, on certain assumptions, the employment of insured labour at the end of this period, i.e. in the middle of 1951, as compared with 1938. We shall take into account the changes resulting from normal entry, war losses, the increased number of women working in industry, the rise in the regular Forces, and the reduction in unemployment.

The increase in the working population aged 16—64 from 1938 to 1951 may be estimated on the basis of the forecast of the Registrar-General.[2] If constant percentages of occupied persons in relation to all persons of a given age and sex are used, we arrive at something like 300,000. However, in the 13-year period preceding 1938 the increase in the number of insured persons exceeded a similarly compiled increase in the corresponding occupied population[3] by about 500,000. For the period 1938—51 we shall assume that a similar trend will take place, but on a rather reduced scale, and thus add 250,000—500,000 to the figure of 300,000 arrived at above. The increase of the insured population from 1938 to 1951 may be thus put at 700,000. We assume further: (*a*) that war losses in insured labour (killed and permanently disabled) will be of the order of 400,000 ;[1] (*b*) that of the extra women who came into industry during the war about half a million will stay ; (*c*) that the increase in the regular forces (inclusive of conscripts) as compared with pre-war will reduce the insured labour force by 400,000 ; (*d*) that a state approaching full employment will prevail in 1951 so that there will be only 400,000 unemployed on that date, whereas in 1938 there were 1,400,000 wholly unemployed.[2] We can now calculate the increase in insured employment in 1951 as compared with 1938.[3]

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[1] The calculation presented here is in fact the result of a number of preliminary attempts.

[2] *Current Trend of Population of Great Britain*, Cmd. 6358.

[3] See Professor A. L. Bowley, *Studies in National Income*, page 56. We have adjusted his results relating to all the occupied population so as to obtain only the changes of the age group 16—64.

TABLE I.

Increase in insured labour in employment from 1938 *to* 1951.

	million workers.
Normal entry	+0.7
War losses	—0.4
" Extra " women in industry	+0.5
Increase in the regular Forces	—0.4
Reduction in unemployment	+1.0
Total increase	+1.4

We assume further that the average working time in 1951 will be the same as in 1938. The volume of insured employment in 1951 will therefore be higher by 1.4 million " 1938 workers" (i.e. persons working the same time as in 1938) than in 1938. Now it has been estimated that in 1943 the volume of insured labour in employment, taking into account both the increase in numbers and in working time, was about 10% higher than in 1938.[4] The number of insured persons in employment in 1938 (under the General and Agricultural Scheme) amounted to 13.8 million workers.[5] Thus the increase in the volume of labour from 1938 to 1943 expressed in " 1938 workers " amounted to 1.4 million.[6] It follows that the volume of insured employment will be about the same at the beginning and at the end of the 6-year period considered. It is plausible to assume that throughout the period it will not be far from this level, the influx of demobilised persons being offset by the reduction in working time and employment of women. We can conclude that the average volume of employment in the 6-year period considered will be higher by 1.4 million " 1938 workers " than that in 1938.[1] Insured employment in 1938 was 13.8 million workers. Thus the supply of labour in the transition period will be 15.2 million " 1938 workers."

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[1] The total number of fatal casualties among U.K. soldiers, merchant seamen on British ships, and air-raid victims in this country amounted to about 250,000 up to September 1944. We allow for the fact that not all soldiers come from insured labour, the same being true of air-raid victims, on the one hand, and for the future losses, deaths of prisoners of war, and permanently disabled on the other hand.

[2] The temporarily stopped need not be taken into account as they are mostly short-timers and thus will be accounted for in the assumption about average working time.

[3] We have not taken into account the influence of the raising of school leaving age. Although this does not affect the number of insured of the ages 16—64 it upsets the parallelism between the supply of insured and total labour which is assumed in the calculation. This effect, however, will presumably be offset by (*a*) shortening the period of apprenticeship, (*b*) increase in employment of persons over 65 as a result of the expansion of this age-group.

[4] J. L. Nicholson, " The Distribution of the War Burden," BULLETIN Vol. 6, No. 10, p. 159.

[5] The number of insured *minus* the number of wholly unemployed with the present scope of insurance.

[6] This figure may be subject to a rather large error; but even if such is the case the effect upon our results is unlikely to be important. See footnote p. 269.

Productivity of Labour

It has been estimated[2] that before the war the all-round productivity of labour in this country was increasing by about 1.5% per annum. Thus, but for the war we could expect an increase of about 10% from 1938 to 1945. During the war technical progress in the sense of innovations was probably much slower in the non-armament sector owing to the lack of new investment. On the other hand, however, there were important improvements in the organisation of production etc. (e.g. food, utility goods), which will most probably remain a lasting achievement. We shall therefore assume that the productivity of labour at the beginning of the reconstruction period will in fact be 10% higher than in 1938.

During the reconstruction period the pace of the increasing productivity will most probably be much greater than normally owing to large-scale capital investment. It may be assumed that the annual rate of increase will be not less than 2 per cent and it is this figure which we shall adopt. We estimate therefore that compared with 1938 productivity will be 10 per cent higher at the beginning of the transition period (1945), 23½ per cent higher at the end of the period (1951) and hence on the average of the transition period 17 per cent higher.

Demand for Labour

" Current " Demand

The demand in the transition period may be divided into four parts : (*a*) demand for current consumption, for current replacement of capital equipment, and for goods and services required by public authorities ;[3] (except armaments etc. in connection with the Japanese war); (*b*) satisfaction of " piled up demand," i.e. making good the inroads which the war has made into the consumers' stocks of durable and semi-durable goods and into fixed and working capital of the business ; (*c*) additional modernisation and expansion of fixed and working capital ; (*d*) armaments etc. in connection with the Japanese war. For the sake of calcu-

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[1] It may be shown that if the increase over the 1938 level at the beginning of the transition differs considerably from 1.4 million persons (as it well may, see footn. p.268) this will not affect significantly the average of this increase over that period. Let us assume, for instance, that at the beginning of the transition period the figure in question is 1 million instead of 1.4 million and that the demobilisation will be completed after two years. At the end of these the increase in employment over 1938 may be assumed the same as at the end of the 6 years transition period (the normal entry in the intermediate period will be nearly zero). The average over the first two years will be thus about 1.2 million ; the average over the next four years—about 1.4 million ; and thus the average over the 6 years period considered—about 1.35 million which is very close to 1.4 million.

[2] *Cf.* N. Kaldor, " The Beveridge Report," *Economic Journal*, April 1943, p. 11.

[3] In the latter category there is included public investment except capital expenditure of the Post Office and the housing and trading services of local authorities. This ype of capital expenditure is included in private investment.

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lation, however, we shall change this division slightly. Owing to the scarcity of skilled building labour in the first years after the war building activity will be limited by this factor. We shall therefore calculate first the volume of labour required to provide: (1) for current consumption, (2) for current replacement of plant and machinery, (3) for building as a whole, and (4) for Government requirements of goods and services. On the other hand, we shall exclude buildings from (*b*) and (*c*).

We shall now compare the " current demand " as defined above with personal consumption, private investment and Government[1] purchases in 1938. (1) In 1943 the total consumption (inclusive of that of the Forces) was 0.79 of the 1938 level. At the end of the transition period the volume of consumption (calculated below on certain assumptions) is taken to be 1.29 of the 1938 level. If " current " consumption increased during the transition period linearly from 0.79 to 1.29 of the 1938 level it would be on the average 1.04 in relation to 1938. In fact it will probably rise more slowly in the first years of the transition period and more quickly thereafter; as a result the average will be somewhat lower; we shall assume it to be at about the level of 1938. (For instance, if current consumption increases linearly from 0.79 to 0.88 in the first two years and again linearly from 0.88 to 1.29 in the next four years the average is about 1.00.)

(2) Net investment in plant, machinery, etc. in 1938 has been estimated at about £100 million.[2] We can assume that current replacement required in the transition period will be about the same as depreciation, etc., in 1938; it follows that its volume will be less than the 1938 level of gross investment in plant, machinery, etc. by £100 million at 1938 prices.

(3) We shall now consider the change in building activity. The target planned by the Government for post-war is 1¼ million building workers. This target, however, is expected to be reached only after a relatively long period of training.[3] In 1938 the number of insured building workers was one million. Immediately after the war the number of available builders will probably be substantially smaller. We assume, therefore, that the average of the available building labour in the transition period will be of the order of a million. In 1938 the average number of insured building workers *employed* was 900,000. Thus we assume that the volume of building in the transition period will be about 10% higher than in 1938. According to the data on investment in 1938 this difference amounts to about £40 million at 1938 prices.

(4) Finally, we shall assume that the volume of goods and services purchased by public authorities the production of which requires insured labour will be in the transition period on the average roughly the same as in 1938 (except armaments etc. in connection with the Japanese war).

It follows that current consumption, current replacement of plant, machinery, etc., Government purchases of goods and services requiring insured labour and total building in the transition period will be smaller by £60 million at 1938 prices than the volume of consumption, gross private investment, and Government purchases of the specified type in 1938.

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[1] By Government we shall mean throughout this paper all public authorities.

[2] White Paper on National Income and Expenditure, 1938—43, Cmd. 6520.

[3] Training for the Building Industry, Cmd. 6428.

It might seem that, abstracting from the change in productivity of labour, the difference between the actual insured employment in 1938 and employment required for satisfying the " current demand " in the transition period is equal to the labour equivalent of £60 million. This is not so, for there will be an additional demand for labour in the transition period arising out of the fact that more will have to be exported than in 1938 in order to pay for the 1938 volume of imports.

With regard to foreign trade in the transition period we make the following assumptions :—(*a*) The balance of payments on current account—including in it all imports (also Lend and Lease), in so far as they are not directly connected with the Japanese war—is neither positive nor negative for the transition period taken as a whole.[1] (*b*) The terms of trade are assumed to be the same in the transition period as in 1938. On these assumptions a higher volume of exports will be necessary to secure in exchange the 1938 level of imports and this for two reasons :—(1) In 1938 there was a negative balance on current account of £55 million, while in the transition period as a whole we assume it to be zero. (2) The real value of income from overseas will be much smaller in the transition period than in 1938. Income from overseas amounted in 1938 to £235 million. We can assume that the loss of foreign assets during the war reduced its money value by ⅓ to ⅔. Assuming further in the transition period a price level 50% higher than in 1938 we can estimate the real value of income from overseas in the transition period at £50—£100 millon. We adopt £75 million, the possible error being of no importance for our calculation. The loss in the real value of income from overseas is thus estimated at £160 million.

It follows that in order to pay for 1938 imports, net exports (i.e. exports net of cost of foreign materials used in their manufacture) in the transition period must be increased by £55+160=215 million p.a. at 1938 prices.[2] (Or imports must be replaced by home production).

It follows from the above that to obtain the volume of insured labour required in the transition period by "current demand" the 1938 insured employment must be reduced by the labour equivalent of £60 million worth of investment goods (see above), increased by the labour equivalent of net exports worth £215 million, and finally an allowance must be made for higher productivity of labour.

Insured employment in 1938 amounted to 13.8 million workers.[3] The 1938 labour equivalent of net output of manufactured goods worth

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[1] This assumption does not exclude the possibility of some repayment of Dominion balances during the transition period provided it is offset by new foreign credits from other sources (inclusive of Lend and Lease in-so-far as it is not directly connected with the prosecution of the Japanese war).

[2] Net exports in 1938 were about £400 million, so that an increase by £215 million at 1938 prices means a rise in volume by about 50%. That would agree with the recent official statements about the necessity to increase exports by 50% above pre-war, if they can be interpreted in the sense that this rise is required in order to pay for the pre-war volume of imports.

[3] With the present scope of insurance, *cf*. p. 268.

£155 million may be estimated at 0.7 million workers.[1] It follows that with 1938 productivity " current demand " in the transition period would require 14.5 million " 1938 workers." As productivity in the transition period has been taken to be 17 per cent higher than in 1938 (see p. 269) we can estimate the actual requirement of insured labour for the satisfaction of " current demand " at $\frac{14.5}{1.17}$ million=12.4 million "1938 workers."

As the total labour supply has been estimated at 15.2 milllion " 1938 workers " the difference of 2.8 million " 1938 workers " is available for the satisfaction of piled-up demand, etc., which we shall now estimate.

THE " PILED-UP DEMAND " FOR CONSUMPTION GOODS.

The consumption of clothing, household goods and motor cars in 1938 can be estimated at about £750 million at retail prices. During the war this consumption has fallen considerably. The difference between what this consumption would have been if in all war years it had remained at the 1938 level and the actual level of consumption, may be estimated (up to the middle of 1945) at about £1,800 million at 1938 prices. This amount is of course much higher than the inroads which the war has made into the consumers' stocks of semi-durable and durable goods. It is clear that not all deficiencies of war consumption as compared with the " normal " level will have to be made good.

The problem may be approached from another angle. The total personal savings made during the war will be by mid-1945 about £6,200 million. Out of this something like £1,000 million may be considered to correspond to the ' normal' rate of saving. There will have been thus accumulated £5,200 million of war extra savings. However, an inquiry into war savings of the working class has shown that these savings are distributed very unequally so that 10% of the families in the sample examined accounted for over 50% of all savings.[1] It is not unlikely that a similar pattern exists with regard to middle class savings. It is, further, probable that heavy savers will spend a small proportion of war savings and the rest of savers a large one. Thus it is plausible to assume that something like a half of the £5,200 million, say, £2,500 million of war extra savings will be spent in the transition period. Assuming that prices in the transition period will be something like 50% higher than in 1938 we arrive at about £1,700 million at 1938 prices. This figure does not seem unreasonable when compared with the war-time deficiency of semi-durable and durable consumption goods estimated above at £1,800; (the latter exceeds substantially the actual deterioration in consumers' stocks but post-war spending is likely to exceed it as well). For the subsequent calculation we adopt £1,700 million at 1938 prices as the demand for this type of goods in addition to " current consumption " which has been assumed above to be on the average at 1938 level. The equivalent of £1,700 million in wholesale prices is about 30 per cent less or about £1,200 million.

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[1] It is estimated below that output of non-food consumption goods and investment goods required in 1938 about 4.7 million insured workers per yearly net output worth £1,000 million. see p. 276.

[2] Charles Madge, *War-Time Pattern of Spending and Saving*, National Institute of Economic and Social Research, Occasional Paper IV.

PILED-UP DEMAND FOR FIXED AND WORKING CAPITAL.

The piled-up demand for fixed and working capital is the result of insufficient replacement during the war of private capital equipment, reduction in working capital and stocks, and of war damage. According to the White Paper[1] total private disinvestment in the period 1940—43 amounted to about £750 million. Up to the middle of 1945 this figure will probably rise to something like £1,100 million.[2]

This figure represents the reduction in the value of fixed and working capital of private business[3] inclusive of sales of fixed assets to the Government but exclusive of war damage.[4] The reduction in value of the capital in question is given according to business computing practices. This makes it necessary to introduce two corrections in order to arrive at the value of the quantitative reduction of private fixed and working capital. The first relates to the appreciation of working capital and stocks owing to the war-time rise in prices which makes disinvestment appear *pro tanto* less. This appreciation has been estimated at about £500 million.[5] The other correction is made necessary by the fact that depreciation is based on the acquisition cost of equipment while the value of the corresponding replacement was much higher in war years owing to the rise in prices of investment goods. The pre-war level of depreciation has been estimated at £340 million. In war years depreciation was probably, somewhat higher owing to the more intensive utilisation of equipment say, £370 million at 1938 prices. Assuming prices of investment goods in war years to have been on the average 40% higher than in 1938 we obtain the necessary correction taking 40% of £370 million and multiplying it by the number of war years, i.e. 5½ years. This gives us a correction of about £800 million. Adding the two corrections to the White Paper figure of disinvestment we obtain £2,400 million, which stands for the value of the quantitative reduction of fixed and working capital in private business at current prices inclusive of the sales of fixed assets to the Government but exclusive of war damage.[4]

However, to arrive at the figure of piled-up demand for investment goods other allowances must yet be made. During the war the Government has become the owner of many factories or parts of factories either by undertaking new investment or by purchasing fixed assets. According to the Report of the Select Committee on National Expenditure[6] the State owned assets of this type (exclusive of Ordnance Factories) amounted to about £500 million. A substantial part of these assets will be made available for peace-time production although it will probably require in many cases considerable reconversion investment. Thus a substantial part of the £500 million must be deducted from the figure of disinvestment arrived at above. And this is not all. In addition to

[1] Cmd. 6520.

[2] Private disinvestment in 1943 was according to the same source £250 million.

[3] Which in this context is taken to include Post Office and the housing and trading services of local authorities, *cf.* p. 269.

[4] This is not quite precise. In fact, war damage to buildings insofar as it has been made good *is* included in this figure. But since further we subtract from the total figure of disinvestment that of disinvestment in building containing the same amout of war damage to buildings this factor does not affect our final result.

[5] *Economic Journal*, June—September 1943, p. 264.

[6] 16th Report, Session 1942—43.

State owned factories there are many other fixed assets and stocks of commodities which have become Government property during the war and which will be available for peace-time production after the war. Lacking any data about the value of the assets in question we shall deduct from the disinvestment figure £500 million assuming that the unsuitability of war factories or the reconversion cost is offset by the existence of other State owned assets which will be made available for peace-time production. This leaves us with £1,900 million as the value of disinvestment exclusive of war damage, to be made good in the period of reconstruction. Deflating it by the price index of investment goods in the war period which we assumed above to be 1.4 in relation to 1938 we obtain £1,350 million at 1938 prices. However, for the purpose of our calculation we must still exclude the arrears in building repairs because, as stated above, we want to find here only the piled-up demand for plant and machinery. The required repairs to buildings in 1938 have been estimated at about £100 million.[1] Assuming that only, say, 25% of normal repairs have been carried out during the war, we shall obtain the arrears at 1938 prices by taking 75% of £100 million and multiplying this by 5½ years which gives us about £400 million at 1938 prices.[2] Deducting this item from £1,350 million arrived at above we obtain £950 million as the estimate of piled-up demand for plant and machinery, exclusive of war damage at 1938 prices.[2]

We shall have still to allow for war damage. The total amount of war damage compensation for plant, machinery, stocks, and private chattels paid in the period 1940—43 amounted to about £550 million. Up to the end of the European war this amount will probably rise to something like £700 million. Most of the compensation paid has already been used for making good war damage, but as in the White Paper estimates of disinvestment the making good of war damage has been treated as any other investment and thus the figure of disinvestment was *pro tanto* reduced, the value of compensation must be added back. Deflating £700 million again with a price index of 1.4 we arrive at £500 million at 1938 prices. This amount includes also the compensation for private chattels, but this is as it should be because in the calculation of piled-up demand for semi-durable and durable consumption goods we did not take into account war damage.[3] We can now tabulate the total figure of piled-up demand at wholesale 1938 prices :

TABLE II.

Piled-up Demand at 1938 *Wholesale Prices.*

	£ million
Semi-durable and durable consumers' goods	1,200
Plant, machinery, and working capital	950
War damage	500
Total piled-up demand	2,650

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[1] Cmd. 6520.

[2] In fact, disinvestment in buildings exclusive of war damage is smaller because the damage to buildings made good during the war has not been taken into account in our estimate. Thus £400 million include this part of the war damage to buildings. But so does the total figure of disinvestment (£1,350 million) include this item (see footnote to p. 273). As a result the £950 million of disinvestment in plant and machinery is *exclusive* of any sort of war damage.

[3] There should be still added the compensation to be paid after the war for the respective assets. We have no data at all about this item. It seems unlikely that it will be large as compared with the total piled-up demand and so we shall neglect it.

It is interesting to notice that this result does not depend significantly on the war-time index of prices of investment goods in relation to 1938 used in the calculation. For, if we use as this index not 1.4 but 1.5, the increase in the correction for depreciation (see p. 273) is nearly exactly offset by the deflation with a higher index in the later stage of the calculation.

ADDITIONAL EXPANSION OF FIXED AND WORKING CAPITAL.

As will be seen below, on certain assumptions, the national output at the end of the six years " transition " period will be higher by 35 per cent than in 1938.[1] This necessitates not only making good the replacement neglected during the war and war damage but also the expansion of fixed and working capital beyond the 1938 level. We shall assume that working capital and stocks will have to be increased proportionately to the national output, i.e. by about one-third. The value of inventories at the end of 1938 has been estimated at about £1,800 million.[2] Thus the required increase in working capital and stocks might be put at £600 million at 1938 prices.

With regard to fixed capital the position is different because the degree of utilisation was far from full in 1938 so that a large part of the increased output will not require additional productive capacities. We shall assume rather arbitrarily that the modernisation and expansion of plant and machinery, in addition to the investment accounted for above in the calculation of piled-up demand, will be of the order of £500 million at 1938 prices. This is a substantial investment considering that annual depreciation, exclusive of buildings, was in 1938 about £230 million. Additional investment in fixed and working capital is thus assumed to be £1,100 million at 1938 prices.

ARMAMENTS DURING THE JAPANESE WAR.

It can be estimated that in 1943 something like 7.5 million " 1938 insured workers " were directly and indirectly engaged in the war sector.[3] If we assume (*a*) that during the Japanese war armament production will be halved as compared with the 1943 level (it has been recently announced that this will be the American policy after the end of the European war); and (*b*) that the Japanese phase of the war will last something like 1½ years after the beginning of the transition period (i.e. to the end of 1947), then 5.5 million man-years would be absorbed by armaments etc. during that period. This figure requires, however, a certain correction. If employment in the war sector will be halved there will be a corresponding reduction in working capital and the maturing of this amount of working capital into finished armaments will reduce *pro tanto* the total amount of man-years required to produce finished armaments for the Japanese war. If we assume that working capital in war industries is equivalent to, say, 3 months production of finished armaments, this saving of labour will amount to ¼ of the reduction in employment, or about 1 million man-years. By deducting this amount from the 5.5 million man-years arrived at above we obtain 4.5

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[1] See p. 277. The structure of output is assumed to be similar to that of 1938.

[2] A. Maizels, "Consumption, Investment and National Expenditure in War-Time," *Economica*, May 1941.

[3] For the method of the estimates see M. Kalecki " Sources of Man Power in the British War Sector," BULLETIN, Vol. 5, No. 11.

million " 1938 man-years " (i.e. man-years based on 1938 working time) as the corrected volume of labour required by the Japanese war.

THE LENGTH OF THE TRANSITION PERIOD.

In the preceding section we arrived at the conclusion that in addition to the demand for labour for current consumption, current replacement of plant and machinery, for building and for Government purchases (except those connected with the Japanese war) there will be in the transition period (1) a piled-up demand of £2,650 million at 1938 wholesale prices for semi-durable and durable consumption goods and machinery and plant, (2) an additional demand for fixed and working capital of £1,100 million (at 1938 prices), and (3) demand for armaments equivalent to 4.5 million man-years. To satisfy this extra demand there will be available on the average 2.8 million workers. In order to arrive at the length of the transition period it is necessary to calculate the equivalent of £3,750 million at 1938 wholesale prices in man-years. (By taking into account piled-up demand for semi-durable and durable consumption goods at the *wholesale* stage we omit in our calculation the respective labour in retail distribution, but this omission does not affect our results significantly).

It has been estimated that in 1938 about £2,000 million worth of investment goods and non-food consumption goods for the home market (at wholesale prices) and exports required insured employment of about 7.5 million workers.[1] After allowing for imported raw materials, semi-manufactures and finished goods we estimate the value of home produce of these 7.5 million workers as about £1,600 million. It follows that every £1,000 million of home produce of the kind in question required in 1938 4.7 million man-years. The average productivity in the transition period will be 17 per cent higher than in 1938.[2] Technical progress will, however, be more prominent in manufacturing than in other sectors of the economy. Something like a 25 per cent increase in productivity as compared with 1938 would seem to be a more appropriate figure here. With such a rise in productivity the production of £1,000 million worth of non-food consumption goods or investment goods at 1938 wholesale prices will require in the transition period on the average 3.7 million ' 1938 man-years.' Thus the labour equivalent of £3,570 million at 1938 prices may be estimated at 14 million man-years. (This equivalent includes not only the workers employed in the production of goods subject to piled-up demand, etc., but also allows for exports which are necessary in order to obtain in exchange imports of raw materials and semi-manufactures used in their production, provided the terms of trade are the same as in 1938).

Adding to these 14 million worker years required to satisfy the piled-up demand, etc., the 4.5 million worker years necessary to produce the armaments in connection with the Japanese war, we obtain 18.5 million workers as the labour requirements of war and reconstruction in the transition period. On the other hand, the available supply of labour is according to our calculation 2.8 million workers after satisfying 'current demand.' Dividing the first of these figures by the second, we obtain the length of the transition period of between 6 and 7 years. As has been said in the introduction this figure is of conjectural character, but it indicates that the transition period during which man power will be scarce is unlikely to be below five or above eight years.

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[1] See M. Kalecki " Sources of Man Power in the British War Sector," BULLETIN Vol. 5, No. 11. The figure given there is actually 7.1 million workers—in mining, manufacturing and building. The figure of 7.5 million workers allows roughly for the respective insured labour in transport, etc.

[2] See p. 269.

II. THE PROBLEM OF EMPLOYMENT AFTER THE TRANSITION PERIOD

Our previous calculation was in one important point based on the economic situation following the transition period. We assumed that in the transition period current consumption would gradually increase from its present level to that which would obtain in the period immediately following it. We shall consider now the economic situation in that period in some detail.

The National Income.

We estimated above the increase of insured employment in 1951 as compared with 1938 at 1.4 million workers on condition that unemployment will be 0.4 million workers. As in 1938 insured employment was 13.8 million workers this means a 10 per cent increase over the 1938 level. (Unemployment would thus be about 3 per cent). We have further assumed that at the beginning of the transition period all round productivity will be 10 per cent higher than in 1938 and that during the transition period, which has been estimated above at about 6 years, the annual increase in productivity will be 2 per cent. It follows tnat if full employment is assumed in 1951, the increase in the level of employment as compared with 1938 will be 10 per cent while the rise in all round productivity is 23 per cent. If the structure of national output in 1951 is assumed similar to that in 1938 a rough estimate of the value of the national output in 1951 at 1938 prices may be obtained by multiplying its 1938 level by 1.1 and 1.23, i.e. by 1.35.

We make the following assumptions with regard to the beginning of the post-transition period (some of which have been already specified above): (*a*) That the Government maintains full employment. (*b*) That working time is the same as in 1938. (*c*) That the terms of trade are the same as in 1938. (*d*) That foreign payments on current account are balanced. (*e*) That the price level is 40 per cent higher than in 1938. (*f*) That E.P.T. and N.D.C. are abolished; that income tax will be 8/- in the £ as compared with 5s. 6d. in the £ in 1938, further that the exemption limit and the personal and family allowances will increase proportionately to the level of wage-rates and that the percentage allowance for earned income and the ratio of reduced rate to standard rate will be restored to the 1938 level; finally, that the surtax system will be such as to render the same proportion between income tax and surtax yield as in 1938. (*g*) That the burden of indirect taxation on national output will be the same as in 1938, i.e. the relation of the aggregate of indirect taxes net of subsidies to the value of home-produced national income gross of depreciation will be the same as in 1938.

We shall try to show that with this level of taxation the Government expenditure necessary to maintain full employment is approximately balanced with revenue.

By the value of national output we understand here the value at market prices of goods and services bought by ultimate consumers, by firms for replacement and expansion of capital (inclusive of changes in working capital and stocks), by the Government and by exporters—all net of foreign raw materials and semi-manufactures used in their production. The value of national output so defined is equal to the home-produced national income gross of depreciation plus indirect taxation, because any item of the national output valued at market price is fully accounted for by incomes, depreciation and indirect taxes. As we have assumed above that indirect taxation in 1951 represents the same proportion of national output as in 1938, and further that the terms of trade are the same in 1951 as in 1938, it is clear that real national home-produced income gross of depreciation will change from 1938 to 1951 in the same proportion as the national output.

Now, the increase in the national output has been estimated above at 35 per cent. The home-produced national income gross of depreciation amounted in 1938 to £4.71 thousand million. It follows that for 1951 it may be estimated at £6.36 thousand million at 1938 prices.

The income from overseas in the transition period has been estimated above (p. 271) at £75 million at 1938 prices, on the assumption of a price level 50 per cent higher than in 1938. For 1951 we assume a price level only 40 per cent higher than in 1938, and accordingly we estimate the income from overseas at £0.08 million at 1938 prices as compared with £0.23 million in 1938.

We can now calculate the national income (gross of depreciation) in 1951 at 1938 prices by adding the income from overseas to the home-produced income. We arrive at £6.44 thousand million as compared with £4.94 thousand million in 1938.

These figures are gross of depreciation. The value of the latter in 1938 was £0.34 thousand million as computed for income tax purposes. In 1951 a figure computed in this way may be expected to be lower in real value because, although the volume of capital equipment will be somewhat higher by then, its valuation will still to a considerable extent be based on pre-war prices. On the other hand, the recent changes in the income tax wear and tear allowance (initial allowance of 20 per cent of cost of new plant etc.) will tend to raise depreciation as computed for income tax purposes for a number of years after the war. We shall assume that as a result the real value of depreciation will be approximately the same as before the war, meaning by this that such will be the deduction from income for income tax purposes. At the same time this figure will not be very far from the actual depreciation because the volume of equipment in 1951 will not exceed the 1938 level by a high percentage.

We can now calculate the net national income at 1938 prices in 1951. By deducting depreciation from the gross national income we obtain £6.10 thousand million as compared with £4.60 thousand million in 1938 which means a rise of about 33 per cent.

IMPERSONAL AND PERSONAL INCOME.

We shall now try to obtain a plausible figure for undistributed profits in 1951. By deducting this from the national income and adding so-called transfers (interest on national debt, social security payments etc.) we shall obtain the aggregate personal income.

In 1938 undistributed profits before tax, inclusive of Government income from property, trading etc., amounted to £0.3 thousand million, representing about 7 per cent of the national income exclusive of soldiers' remuneration (and slightly less in relation to the total national income). A corresponding figure for 1943 is £1.09 thousand million. This figure, however, is not comparable with 1938 because of the relative reduction of dividends as the result of the existence of the Excess Profits Tax. The necessary correction may be estimated at something like £0.29 thousand million[1] which leaves us with £0.80 thousand million. This represents about 11 per cent of the 1943 national income exclusive of soldiers' remuneration. For 1951 the plausible percentage should be rather nearer to 1943 than to 1938.[2] We adopt the figure of 10 per cent. Applying it to the national income in 1951 we obtain £0.61 thousand million at 1938 prices. Deducting this figure from the national income we obtain £5.49 thousand million as personal income exclusive of transfers. We shall now have to estimate the latter.

The interest on national debt paid to persons and firms in 1945 will be something like £0.44 thousand million. We shall assume that during the transition period the national debt will not increase (it may be shown that there is even some likelihood of its reduction). We assume therefore that in 1951 the money value of the interest on national debt will be £0.44 thousand million, which, with a 40 per cent price increase as compared with 1938, gives £0.31 thousand million at 1938 prices (inclusive of the interest on National Saving Certificates; the corresponding figure for 1938 is £0.20 thousand million). We assume further that war pensions, which were £0.04 thousand million in 1938, will be £0.1 thousand million in 1951 or £0.07 thousand million at 1938 prices. Finally, the excess of social security payments over contributions of insured persons on the basis of the Government plan for social security may be estimated for 1951 at £0.42 thousand million. This estimate is based on the assumption that there will be only 3 per cent unemployment, and it includes school meals for children. We also include in it the increase in the scope of health services, because this will probably reduce to the same extent private expenditure of the insured on medical treatment.[1] At 1938 prices the excess of socia security payments over the contributions of the insured will be £0.3 thousand million as compared with £0.18 thousand million in 1938. The total transfers in 1951 will thus be £0.68 thousand million at 1938 prices as compared with £0.42 thousand million in 1938. Adding this figure to personal incomes exclusive of transfers arrived at above, we obtain the total personal incomes (net of contribution to social insurance) of £6.17 thousand million at 1938 prices as compared with £4.72 thousand million in 1938. The consecutive stages of the calculation are shown in Table III.

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[1] In pre-war years 57 per cent on the average of an increase in profits went into a rise of dividends, etc. (See E. A. Radice, *Savings in Great Britain* 1923—35, p. 71). The E.P.T. due in 1943 amounted to about £500 million. 57 per cent of this amount makes about £290 million.

[2] This for two reasons: (*a*) higher volume of employment in 1943 and 1951 as compared with 1938: a rise in employment increases the ratio of undistributed profits to the national income; (*b*) the rapid increase in price level tends to increase undistributed profits in relation to total profits because it reduces *relatively* interest payments and to a certain extent dividend payments as well. The position is restored only after a rather long period.

TABLE III.

Real National Income in 1938 *and* 1951.

	1938	1951
	£000 million at 1938 prices	
Home-produced national income gross of depreciation	4.71	6.36
Income from overseas	+0.23	+0.08
National income gross of depreciation	4.94	6.44
less Depreciation	—0.34	—0.34
National Income	4.60	6.10
less Impersonal income	—0.30	—0.61
Transfers	+0.42	+0.68
Personal Income	4.72	6.17

INCOME TAX.

We have assumed above that Excess Profit Tax and National Defence Contribution will have been abolished by 1951, but that the standard rate of income tax will then be 8/- in the £ as compared with 5s. 6d. in 1938, i.e. 46 per cent higher, further that the exemption limit and the personal and family allowances will increase proportionately to the level of wage-rates and that the percentage allowance for earned income and the ratio of reduced rate to standard rate will be restored to the 1938 level; finally that the surtax system will be such as to render the same proportion between income tax and surtax yield as in 1938.

We shall now estimate roughly the total yield of income tax in 1951 at 1938 prices. A very large part of income tax and surtax was yielded in 1938 out of rent, interest and profits. It may be seen that on our assumptions a rough estimate of income tax and surtax yield in 1951 at 1938 prices may be obtained if we increase the 1938 yield: (*a*) in the proportion of the rise in the standard rate, i.e. by 46 per cent; and (*b*) in the proportion of the rise in " real " rents, interest and profits from

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[1] According to the Government plan social security payments in the strict sense will amount in 1951 to about £540 million. Allowing for unemployment being accord, ing to our assumptions only 30 per cent of that assumed by the Government plan-this amount is reduced to £465 million. Contributions of insured persons amount, according to the Government plan, to about £175 million and after allowing for lower unemployment to about £190 mlilion. The excess of payments over contributions of the insured is thus £275 million. To that we add: (*a*) The increase of expenditure on health services as compared with the existing system, amounting to £80 million. (*b*) School meals for children—£60 million. In this way we arrive at the total security payments in our sense of £415 million.

1938 to 1951. The total amount of these in 1938 was about £1.85[1] thousand million and was composed of £1.42 thousand million of interest and profit earned at home, exclusive of interest on National Debt, £0.20 thousand million of interest on National Debt, and £0.23 thousand million of income from overseas. In order to estimate the corresponding amount in 1951 at 1938 prices we shall increase the first of these three items in the same proportion as the home-produced national income, i.e. in the proportion of (6.1—0.08) to (4.6—0.23) which gives £1.97 thousand million. We further have from the above £0.31 thousand million for the second item and £0.08 thousand million for the third, which gives us together £2.36 thousand million or 27 per cent more than the corresponding figure in 1938. We can now estimate approximately the total yield of income tax and sur-tax in 1951 at 1938 prices by multiplying their yield in 1938: (*a*) by 1.46, and (*b*) by 1.27. The income tax (inclusive of sur-tax) yield in 1938 being £0.40 thousand million, we obtain £0.74 thousand million as the 1951 yield of income tax and sur-tax at 1938 prices.

It is now easy to calculate undistributed profits and personal incomes net of taxation. Undistributed profits have been estimated above at £0.61 thousand million inclusive of Government profits from property and trading. The latter item was £0.04 thousand million in 1938 and we shall assume it to be £0.06 thousand million in 1951 at 1938 prices. Private undistributed profits are thus £0.55 thousand million. At 8s. in the £ the corresponding income tax is £0.22 thousand million and undistributed profits after taxation are £0.33 thousand million. Deducting the income tax on undistributed profits (£0.22 thousand million) from the total income tax (£0.74 thousand million) we can estimate the income tax on personal incomes at £0.52 thousand million. As personal incomes in 1951 before tax have been estimated above at £6.17 thousand million, after taxation they will amount to £5.65 thousand million at 1938 prices. (Income tax is the only tax considered here. Contributions to social insurance by insured persons have been deducted at an earlier stage of the calculation, the motor vehicle tax is included in indirect taxation, and death duties etc. will be considered at a later stage.)

TABLE IV.

Real Impersonal and Personal Income after Tax in 1938 *and* 1951.

	1938	1951
	£000 million at 1938 prices	
Impersonal income before tax	0.30	0.61
less Government income from property and trading	—0.04	—0.06
Income Tax (and N.D.C. in 1938)	—0.09	—0.22
Private impersonal income after tax	0.17	0.33
Personal income before tax	4.72	6.17
Less Income tax	—0.33	—0.52
Personal income after tax	4.39	5.65

It will be noticed that the real aggregate personal income will be 26 per cent higher in 1951 than in 1938.

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[1] Computed from the White Paper, Cmd. 6520.

Consumption, Investment and Government Expenditure on Goods and Services.

It is impossible to say anything definite about the percentage of personal incomes which will be currently saved in 1951. We shal therefore assume that it will be the same as in 1938, which means that the volume of consumption is supposed to increase in the same proportion as real aggregate personal income (death duties etc. not deducted above from personal incomes being here classified as savings).[1] It follows that the volume of consumption in 1951 will be 29 per cent higher than in 1938. In 1938 this was £4.14 thousand million (inclusive of personal expenditure involved in the acquisition and transfer of property and life assurance) ; thus according to our assumption it will amount in 1951 to £5.34 thousand million at 1938 prices.

We shall now try to estimate the plausible level of private investment in 1951. Private investment in fixed capital gross of depreciation has been estimated for 1938 at £0.69 thousand million, out of which £0.36 thousand million was in buildings.[2] Because of the scarcity of building workers the housing programme is expected to last longer than the transition period and will engage for some time after its end 1¼ million workers as compared with 0.9 million workers employed in 1938. Thus at the beginning of the post-transition period we may assume a volume of investment in building about 40 per cent higher than in 1938, or of about £0.50 thousand million at 1938 prices (or more, if the productivity in building will increase as compared with 1938. With regard to the remaining investment, which was £0.33 thousand million in 1938, it is rather difficult to say anything definite. If the volume of capital equipment were higher in the same proportion as real output, i.e. by 35 per cent, private investment could be expected to rise less because the gross rate of profit would be then probably roughly the same while income tax is higher. But as equipment will have expanded less[3] its utilisation will be greater and so will be the rate of profit. It is thus not excluded that the rise of investment will be even higher than 35% although this seems rather unlikely. On the other hand as both the volume and the utilisation of equipment will be higher than in 1938 it is unlikely that investment should be below the 1938 level. We shall therefore assume that it is higher than the 1938 level, i.e. £0.33 thousand million and lower than this figure multiplied by 1.35 or £0.45 thousand million. The total investment inclusive of building gross of depreciation would thus be £0.83 to £0.95 thousand million. (The ' long-run level ' of investment corresponding to changes in working population and productivity of labour is also probably within these limits.[4])

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[1] The rise in personal income per head will tend to raise the percentage of aggregate income saved as compared with 1938. On the other hand the relative shift from higher to lower incomes as a result of heavier income tax will work in the opposite direction. In addition there may of course be changes in spending and saving habits

[2] Cmd. 6520.

[3] See p 275.

[4] Should the actual level of investment be lower than that which is required for productive capacity to keep pace with changes in working population and the increase in the productivity of labour, private investment must be stimulated. This may be

Having estimated consumption and private investment it will be now possible to obtain the figure of the Government expenditure on goods and services necessary to maintain the effective demand for the full employment output estimated above. Let us consider for this purpose national expenditure, by which we mean the sum of personal consumption, home investment gross of depreciation, foreign investment (i.e. balance of payments on current account), and Government expenditure on goods and services. National expenditure so defined is equal to the national income gross of depreciation plus indirect taxation (because every item of this expenditure may be fully accounted for by wages, salaries, depreciation, rents, interest and profits plus the respective indirect taxation). It has been assumed above that indirect taxation is to increase in the same proportion as the home produced national income gross of depreciation, i.e. by 35 per cent (*cf.* p. 277). The total value of indirect taxation in 1938 was £0.64 thousand million[1] and thus its level in 1951 at 1938 prices will be £0.86 thousand million. As the gross national income in 1951 has been estimated above at £6.44 thousand million at 1938 prices, national expenditure amounts to £7.30 thousand million at 1938 prices. Deducting from that the figure of consumption and private investment arrived at above and recollecting our assumption that foreign investment (i.e. the balance of payments on current account) is equal to naught, we obtain the volume of Government expenditure on goods and services necessary to maintain full employment as £1.01 to 1.13 thousand million at 1938 prices. In Table V the composition of national expenditure in 1938 and in 1951 is given at 1938 prices.

TABLE V.

Composition of National Expenditure in 1938 *and* 1951.

	1938	1951
	£000 million at 1938 prices	
Personal Consumption	4.14	5.34
Gross Home Private Investment	0.65[2]	0.83—0.95
Foreign Investment	—0.05	0
Government Expenditure on Goods and Services	0.84	1.13—1.01
National Expenditure	5.58	7.30

THE BUDGET.

It is now possible to compare the revenue and expenditure of the Government (by which we mean all public authorities) necessary to maintain full employment in 1951. The revenue consists of income tax, Government profits and indirect taxation as estimated above to which must be still added death duties etc. which have so far not-been taken into consideration. We assume these to be £130 million as compared with £90 million in 1938 and £104 million in 1943. Deflated by 1.4 this gives us £0.09 thousand million at 1938 prices. Government expenditure consists of transfers (interest on national debt, social security payments

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achieved by an application of the ' modified ' income tax (*cf. Economics of Full Employment* prepared at the Oxford University Institute of Statistics, pp. 46, 48).

[1] Inclusive of motor vehicle duties and net of subsidies.

[2] This figure is slightly less than investment in fixed capital (£0.69 thousand million) mentioned above because of a fall in the value of inventories during 1938.

net of contributions of insured persons and war pensions) as estimated above and Government expenditure on goods and services necessary to maintain full employment. The budget is presented in Table VI.

TABLE VI.

The Budget of Public Authorities in 1951 (1938 *prices*).

Revenue.	£000 mill.	*Expenditure.*	£000 mill.
Income Tax	0.74	Transfers	0.68
Death duties, etc.	0.09	Goods and Services	1.01—1.13
Indirect Taxation	0.86		
Government profits	0.06		
	1.75		1.69—1.81

It is obvious from this Table that the Budget will be approximately balanced, the possible budget deficit or surplus not exceeding £60 million. (If gross private investment is at the level of the average of its lower and upper limit, i.e. £ .89 thousand million, the Government expenditure on goods and services necessary to maintain full employment is £1.07 thousand million and the Budget is exactly balanced.)

Government expenditure on goods and services (which as all other items is expressed in 1938 prices) exceeds considerably the 1938 level of £0.84 thousand million. The difference which amounts to £0.17—0.30 thousand million is probably more than the planned increase of expenditure on defence, education, etc. (It should be noticed that the increase on health services is accounted for in the rise of transfers, (see p. 279) and the increase in the expenditure on housing is accounted for by the rise of private investment, in which we include the housing services of local authorities.) It follows that some " extra " Government expenditure on goods and services is required to maintain full employment. It should be stressed however, that such is the case only if transfers and indirect taxation are on the scale assumed above. If, for instance, the Government were to expand the social security payments beyond what is intended according to the present plan, there will be a rise in consumption by approximately the same amount, since hardly anything will be saved out of this additional income. This will reduce *pro tanto* the Government expenditure on goods and services required to maintain full employment. As a result the Budget deficit or surplus will not be affected (provided indirect taxes are so adjusted that their total yield is unchanged).

A similar case will arise if, as a result of a policy of subsidisation, prices of necessities are reduced. The amount of indirect taxation, which actually represents the difference between the indirect tax revenue and the expenditure on subsidies, would then be reduced. Consumption would be increased by nearly the same amount (not exactly as saving will probably also increase slightly) ; Government expenditure on goods and services would have to be reduced by as much as the consumption would have risen. In the Budget it would be reflected in a fall of Government expenditure on goods and services, slightly smaller than the reduction in indirect taxation. As a result the Budget deficit would slightly increase or the Budget surplus slightly diminish.[1]

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[1] The above estimate of full employment national income and outlay in 1951 has been produced independently of a similar estimate made recently by Mr. Kaldor with

FINAL REMARKS.

We have constructed above a model of the development of employment and output in the post-war period. Our main assumptions were : (*a*) that full employment will be permanently maintained; (*b*) that the all-round increase in productivity from 1938 to 1945 will amount to 10 per cent and that it will increase during the subsequent period of transition at the rate of 2 per cent per annum ; (*c*) that the average working hours will return after demobilisation to the 1938 level ; (*d*) that the terms of trade will be after the war the same as in 1938 ; (*e*) that foreign payments on current account will be balanced ; (*f*) that income tax after the transition period will be 8/- in the £ (with allowances increased proportionately to wage rates as compared with 1938) and that indirect taxation will increase proportionately to the value of home produced income.

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the assistance of Mr. Barna for 1948 (Appendix C to Sir William Beveridge ***Full Employment in a Free Society***). Although my assumptions are in general different and my methods of estimating much cruder the results are not much divergent if allowance is made for the difference in dates. The increase in the real national income in 1948 as compared with 1938 is estimated by Mr. Kaldor at 20 per cent. My corresponding estimate for 1951 is 33 per cent. As I assume 2 per cent. annual increase in productivity of labour my figure for 1948 would be about 25 per cent $\left(\frac{1.33}{1.06} = 1.25\right)$. Similarly the rise in consumption from 1938 to 1948 is according to Mr. Kaldor 19 per cent while in my estimate it is 29 per cent from 1938 to 1951. Allowing for the change in productivity there corresponds to the latter figure something like 21 per cent rise from 1938 to 1948.

Private investment in 1951 is according to my estimates £890 million gross of depreciation and £550 million net of depreciation (at 1938 prices). Mr.Kaldor's corresponding figure for 1948 (after £60 million of costs incurred in the transfer of property and investment of savings—which with me are included in personal consumption—are deducted) is £510 million. The relation of investment to the national income is approximately the same in either model. This is, however, a mere coincidence. Mr. Kaldor calculated Government expenditure on goods and services according to " needs " and then postulated such investment as is necessary to maintain full employment. I estimated private investment on certain assumptions and then made Government expenditure to ' fill the gap.' As, however, investment does finally play a similar role in both models and the budget is balanced in either case there arises the problem why the income tax rate is 8/- in the £ with me and only 5/10 with Mr. Kaldor.

This difference is however to a great extent apparent. With me the increase in income tax is the only additional burden of taxation as compared with 1938 and N.D.C. is dropped. Mr.Kaldor retains N.D.C. and assumes an all round proportionate rise in all taxes. If my assumptions are applied to Mr. Kaldor's model, the income tax becomes 6/7 in the £ (provided surtax rates are increased in the same proportion). But this is not all. The income tax system itself is different in the models compared. Mr. Kaldor assumes that the exemption limit, and personal and family allowances increase proportionately to the level of prices and I assume that they increase proportionately to the level of wage rates.

As prices increase in both models less than wage-rates as a result of the rise in productivity Mr. Kaldor's system yields more than mine. Similarly he assumes the scale of surtax to change proportionately to the price level while I assume that the surtax system is such that the surtax yield varies proportionately to that of income tax. It may be estimated that for 1948 the income tax and surtax yield, with Mr. Kaldor's system is about 10 per cent higher than with mine. Thus to my 8/- in the £ there corresponds in Mr. Kaldor's model 6/7 + 10 per cent or 7/3. And conversely : should I have followed Mr. Kaldor's assumptions about direct and indirect taxation my rate of incrome tax would not be widely divergent from his 5/10 in the £.

On the basis of these assumptions and some minor ones we arrive at the following conclusions. The length of the transition period in which labour will be scarce and consequently many war-time controls will need to be maintained will be between 6 and 7 years. It has been assumed that during that period consumption, exclusive of the satisfaction of piled-up demand for semi-durable and durable goods, will change gradually from its level in 1943 to that corresponding to full employment at the end of the transition period and that on the average it will be at the 1938 level. It follows that it will be possible to liquidate the consequences of the war in six to seven years without reducing the standard of living on the average below the level of 1938.

After the transition period full employment will continue provided that Government expenditure is approximately equal to the revenue corresponding to the above assumptions about taxation.

The home produced national income (gross of depreciation) in 1951 will be 35 per cent higher than in 1938 ; the national income 33 per cent and personal consumption 29 per cent higher than in 1938.

If the share of wages in the gross home produced income is maintained the real wage bill will increase by 35 per cent. As employment will be 10 per cent higher than in 1938 this means a rise in the real hourly wage rates of 23 per cent.

The anticipated increase in population from 1938 to 1951 being about 3 per cent, a rise in consumption of 29 per cent means a rise in the standard of living of 25 per cent.

There does not seem anything inherently unrealistic in the above assumptions except perhaps those about the terms of trade. In order to secure the 1938 level of imports, exports (net of foreign raw materials used in their manufacture) would have to increase by about £200 million at 1938 prices. In 1938 imports amounted to about £860 million. If they were to increase in the same proportion as home produced income, i.e. by 35%, or by about £300 million at 1938 prices, this would necessitate an equal additional volume of exports at 1938 prices. If may be concluded that net exports would have to increase on this account by something like £250 million and, together with the increase previously calculated, by £450 million. As net exports in 1938 were about £400 million those in 1951 would have to rise to £850 million at 1938 prices. It may be doubted whether this increase which amounts to more than doubling the 1938 value of net exports is possible without a worsening of the terms of trade. Let us therefore consider the effect of a more pessimistic assumption on our estimates. We shall assume that to secure the £850 million worth goods in question it will be necessary to use by 50 per cent more labour than normal either on the account of exporting more cheaply or by producing at home substitutes for imports. This implies a loss of £425 million which is roughly equivalent to a reduction of the real national income by 7 per cent. The standard of living will be reduced by a similar percentage. Our calculations suggest a standard of living after the transition period 25 per cent higher than in 1938. As a result of the export problem this increase would be correspondingly smaller, say, something like 15 per cent.[1] Although this is a substantial reduction, it shows that even on rather pessimistic assumptions a full employment policy will be able to secure for this country a considerable rise in the standard of living over the pre-war years.

M. KALECKI.

THE T.U.C. AND RECONSTRUCTION

'The main objectives of the Trade Union Movement include the maintenance and improvement of wages, working conditions and living standards, the assurance to workpeople of adequate opportunities for suitable employment and the implementation of their right to share in the control of industry.' The 'Interim Report on Reconstruction' is the outcome of a resolution adopted at the Trades Union Congress in 1943, which authorised the General Council 'to prepare and to circulate a general plan for the post-war reconstruction of the industries of the country.' There is no need to stress the importance of this statement on general economic policy, for behind it there exists a very powerful organisation. The Report can be conveniently examined in three parts : (i) The Ownership and Control of Industry ; (ii) Prices and Living Standards ; and (iii) The Maintenance of Full Employment.

I. THE OWNERSHIP AND CONTROL OF INDUSTRY.

Contrasting the modern economic system with that of the *laisser-faire* capitalism of a century ago, the Report points to the dangers of the concentration of economic power in private hands.

> ' Although the supporters of private enterprise still frequently plead their cases in the name of freedom, it is now abundantly clear that the liberty of the individual is most endangered by a system of unrestrained private enterprise.
>
> Equally fallacious is the claim that only free private enterprise can provide a rising level of industrial efficiency . . . One of the strongest arguments for the transfer to public ownership of key industries and for the introduction of those other forms of public control which we propose is that these changes are essential for efficient industrial organisation . . .'

The T.U.C. envisage a gradual transition from unregulated private enterprise to public ownership and public control. The present proposals are designed to achieve certain minimum reforms immediately after the war. In an earlier report, in 1932, the T.U.C. defined three categories of industry :—

(1) Those ripe for immediate socialisation ;
(2) Those less important or less unified but needing some measure of regulation in the public interest ;

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[1] The position in the transition period will be similarly affected by this factor. If the period of transition is not to be lengthened and if a part of imports in that period is not financed by foreign credits the ' current ' consumption—which has been assumed to be on the average at 1938 level—will have to be correspondingly reduced.

(3) Those of minor importance which can be left for the time being under private enterprise.

' Key' Industries. The industries now placed in the first category are fuel and power, transport, iron and steel. The reason given for this choice is that these industries are of vital importance to the well-being of the community in that ' all other industries depend to a greater or less extent upon the goods and services they supply.' This criterion does not seem particularly helpful. It is the service to the final consumers, and not to ' other industries ' which is important. An increase of efficiency in transport, say, is not multiplied because most goods are carried by road or rail. The effect on total welfare of an increase in efficiency of 5 per cent is the same whether it occurs in transport or in any industry *of the same size*, at whatever stage of production. And it can only be from higher efficiency, or the reduction of monopoly profits,[1] that the community can expect to gain from nationalisation. This gain may equally be achieved in agriculture, building, retail distribution or anywhere else. The point is not mere pedantry, for there is a widespread belief that there are certain 'key' industries, whose transfer to public ownership and control will of itself improve the running of the economy as a whole.

Nevertheless, in current discussion, the industries most commonly mentioned as being 'ripe' for socialisation are those listed by the T.U.C. The nationalised industry would be governed by a Public Board, whose members would be appointed solely on the grounds of ability to fill the position and not as representative of particular interests. The T.U.C. claim that in this respect experience gained in the collective organisation of labour is an important qualification for membership of the Board, but they point out that the appointment of representatives of the Unions to the Board would involve the Unions in an ambiguous position, and would be incompatible with their complete independence as bodies representing the interests of the workers in a particular industry. The solution offered is that the workers' organisation should nominate a number of candidates from whom the Minister would select a number of Board members : on appointment to the Board such members would surrender their position in and responsibility to the Trade Union. The Board itself would be accountable to the public through a Minister responsible to Parliament. In addition the T.U.C. propose that there should be national Consultative Councils, to meet the Boards to discuss policy and Works Councils concerned with policy on technical, financial and commercial matters at the workshop level. Such Councils would not, however, be concerned with wage questions, which would be a matter for negotiation between the Trade Unions and the Board.

The general division of function between Parliament, Public Board and Trade Unions proposed for nationalised industries is clear cut and consistent. There still remains the problem of the precise degree of control by Parliament, and there are clearly numerous possibilities which steer between the top heavy bureaucracy which would be needed if any and every action by the Board were subject to Parliamentary questions and the almost complete absence of Parliamentary control which existed, for example, in the case of the Assistance Board.

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[1] A third possibility is that nationalised industries would react more easily to Government requirements with regard to the timing of investment. Whether this will be the case depends on the rules with regard to prices and costs which the nationalised industry must obey.

Four possible bases of valuation were considered for compensation of the present owners of undertakings in an industry to be nationalised: (*a*) Market value of shares and stocks; (*b*) Total capital expenditure less depreciation; (*c*) Valuation of physical assets and (*d*) Reasonable net maintainable revenue. The T.U.C. prefer the last, and ' Reasonable' is to be interpreted as precluding high profits due to war-time operations, or profits due to monopolistic practices. The compensation, to be paid in the form of interest bearing bonds, is to be ' divorced entirely from the industry ' and such bonds should be ' normal Government share . . . carrying a fixed rate of interest.' This is obviously an improvement over the method used in the case of L.P.T.B. which, because of the unduly high compensation, saddled the new Public Corporation with a heavy burden of fixed charges in its early years of operation.[1]

INDUSTRIAL BOARDS.

The proposals for industries not ripe for full nationalisation seem to fall between two stools. At one point it is argued that the proposals will ' advance the preparation of private undertakings for the ultimate transfer to public ownership ': at the same time the Report says that 'the collective organisation of employers, as the collective organisation of workpeople is a valuable pre-condition for the collective organisation of industry as a whole.' Since it is from the employers in an industry that the principal opposition to nationalisation would come it does not seem likely, to put it mildly, that the encouragement of Trade associations or similar employers' collective organisations will make the transfer to public ownership easier. From Trade Unions and Employers' Associations, members will be drawn in equal proportions to form an Industrial Board, which will have an independent Chairman appointed and paid by the Government for a definite period of years. The precise functions of the Boards will vary from industry to industry but the general idea is that they should represent the industry *vis-à-vis* other industries and the Government, that they should plan the industry so as to obtain maximum efficiency, encourage co-operative research, schemes of concentration, study methods of standardisation and so on. Any proposal to fix minimum or general prices, or to restrict production ' should be subject to stricter examination by an appropriate public body and to approval by the Government, possibly by Parliament.' What these proposals amount to in many cases is to add Trade Union representation to existing Trade Associations, which together with the independent Chairman, will make the new Industrial Board.

It is impossible to judge the possibilities of such Boards *a priori*; one can only appeal to recent experience, and this is not encouraging. The efforts of private associations have been more directed towards price and quota fixing and limitation of entry than towards encouragement of research, concentration, or expansion. The new Boards will consist of employers and workers in the industry, a number of independent persons appointed after consultation with the general interests (including presumably the industry) involved, and an independent Chairman. It is somewhat naive to suppose that an independent Chairman would be a sufficient safeguard for the consumer against a continuation of restrictive practices—nor is it necessarily true that the additional 'participation of workpeople as a whole, in the conduct of industry' will be adequate to prevent the development of the Boards in the direction of private or sectional monopolies. For it is not in fact proposed that workpeople should participate as a whole, but that the organisation should be sectional, industry by industry. Nor, in view of what the Report says about Trade Union representation on Public Boards[1] (i.e. in nationalised industries), is it easy to see how Trade Unions can be represented on Industrial Boards, and at the same time ' advance, in the public interest, authoritative and independent criticism of the policy or conduct in the industries in which they operate.'

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[1] It may be objected that the introduction of the word 'reasonable' begs the whole question. The desirable objective is to charge the industry only with the interest on the 'reconstructed' capital i.e. after the re-organisation of the industry has taken place, which may be a matter of several years. Should this charge fall below the 'reasonable' level, then the gap should be filled directly by the Exchequer. *Cf.* T. Balogh, Compensation and Public Boards, BULLETIN Vol. 5, No. 17.

It would, however, be unfair to condemn the Industrial Boards out of hand. They would, no doubt, have a restrictive bias to begin with, but it must be remembered that the restrictionist policies of private associations were a product of mass unemployment. If a policy of full employment is sustained for a number of years the restrictive bias may be lessened. Nevertheless the initial restrictive tendency, by keeping profit margins high would serve to lower the propensity to consume, and thus create an extra obstacle to a full employment policy.

II. PRICES AND LIVING STANDARDS.

The objective of the Trade Union Movement is to obtain for the worker a just return for his labour ' not merely in cash wages, but in the goods and services which are the product of his labour.' There are various types of price control which will help to attain this objective. During the war, the Report points out, there have been two principal methods used. The Government has in many cases become the sole or principal purchaser of the particular material or product. The Government will continue to buy certain things after the war, though, no doubt on a smaller scale than now. It will also be able to control prices of the products of nationalised industries. The second method is the fixing of maximum prices which has led to the Utility Schemes. The Report discusses the possibility of the purchase ' by the Government or a public body, of Utility goods[2] from the manufacturers and their distribution through a publicly controlled organisation to the retailers for sale to the public.' An alternative would be the production of Utility goods in

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[1] ' Members of the governing body cannot at the same time answer to the workers of the industry as their representatives, and bear responsibility to the Minister for its administration.'

[2] ' Owing to the wide range of articles produced in these industries as well as the many variations in quality, direct regulative price control is bound to be largely ineffective, if not impossible.'

Government or otherwise publicly-owned factories. In both cases, the T.U.C. Report argues, the cost of distribution would be reduced.

The possibility of a Consumers' Council, to protect consumers, and containing representatives of the T.U. and Co-operative movements is considered : also the extension of the principle embodied in the Food and Drugs act of accurate descriptive labelling.

What appears to be lacking in this section is a discussion of the overall level of prices ; there is no mention, for example, of subsidies as an alternative, or complementary, means of stabilising prices, so as to transform money wage increases into a rise in real wages. This is an interesting omission. All the proposals for price control are in the right direction, aimed at reducing overhead costs, or excessive profits, but in no case is it possible to say how far and how quickly the reduction can be pushed. It is obvious enough that in the immediate post-war years subsidies will have to be continued at something like the present scale if the cost of living is not to rise further. It is arguable that some subsidies should always be used in order to encourage the consumption of a particular commodity for its own sake, e.g. milk. Apart from this it is desirable on general grounds to stabilise the cost of living as a whole, at any rate once a general full employment policy has been established.

III. FULL EMPLOYMENT.

The remainder of the Report contains the T.U.C.'s answer to a questionnaire submitted by Sir William Beveridge in preparing his recently published report on full employment, a Statement on Finance and Investment policy, and the preliminary views of the T.U.C. on the Employment Policy White Paper. Apart from the definition of full employment, which the T.U.C. treats with caution, the two major questions were whether a rising ' spiral of wages and prices ' would be inevitable, and whether full employment would be impossible without higher labour mobility. To the first question the brief answer given is that ' as regards the Trade Union Movement, there is no need to fear such a spiral if the Government can convince the Movement that in genuine pursuit of a policy of full employment it is determined to take all other steps that are necessary to control prices and can convince the Trade Union Movement of the need to secure equivalent guarantees that wage movements will not be such as to upset the system of price control.' The Report does not discuss how the T.U.C. would, in fact, secure such guarantees from affiliated Unions, should it be necessary.[1]

Again, while taking the view that the problem of mobility in the longer run (after the immediate post-war years) will prove to be very small indeed, on the negative side the Report suggests that 'Trade Unions may well be expected not to impede the achievement of full employment by the rigid maintenance of demarcation practices which were themselves designed to ensure the continuity of employment of their own members during periods of industrial insecurity.'

The T.U.C.'s main criticism of the Employment Policy White Paper is that its proposals are limited to modifying or counterbalancing fluctuations in private investment which are accepted as inevitable. In their view a National Investment Board should be established to survey and co-ordinate all investment plans, private or public. The Board would also have a lending Department to ensure that funds were available for any approved scheme of industrial or national development. The Board would begin with advisory powers but if 'in dealing with private enterprise advisory powers proved inadequate, they would have to be supported by a licensing system.' Licensing, however, is only a one-way control, which works if the pressure to invest is too great; but not if it is insufficient. The Report at another point hits on one solution, but does not develop it in this context. In objecting to the view that the level of taxation on high incomes should be reduced, it points out that *general* taxation need not be reduced to stimulate *specific* re-equipment of industry. Tax concessions for investment are one counterpart to licensing ; like the latter they may be general or discriminatory, according to some schedule of priorities.

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[1] For a discussion of the wage problem in full employment, *cf. Economics of Full Employment*, pp. 68—71.

The Report does not outline any systematic policy for full employment. Many of the recommendations in the Report, if carried out in practice would assist a full employment policy. The maintenance of high taxation—by redistributing disposable income—works in the same direction, but the idea is not developed. Again, the Report, in criticising the White Paper, sees no objection to deficit spending, though this is qualified immediately.[1] It is to be hoped that later Reports will provide a more systematic policy for the economy as a whole.

CONCLUSION.

There are really two Interim Reports on Reconstruction reflecting conflicting trends of thought in the Trade Union Movement. The sectional trend is most clearly marked in the proposals for the establishment of Industrial Boards, where one is given the impression that the solution of all problems is a committee of workers and employers, in equal numbers, with an independent Chairman. The weakness of these proposals is to be found in an undue concentration upon administrative machinery. The other trend of thought is one which tries to look at the economy as a whole, and to see exactly where the Trade Unions fit in to the general picture. It is represented more in the second and third sections of the Report and in the proposals for nationalised industries. This is no new fact about Trade Union policy. Much depends on which of the two paths the Trade Union movement chooses to follow.

G. D. N. WORSWICK.

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[1] 'Where the Government purchases durable assets, such as schools and hospitals, no serious objection can be raised against such purchases being financed by loans.' This is an arbitrary and unnecessary limitation imposed on the Government. Before the war, with a balanced budget, a good deal of capital expenditure was covered by current taxation, so that a deficit brought about, for example, by reducing taxes could, by a mere book-keeping transfer, be 'used' for capita expenditure on durable assets. From the point of view of employment it is indifferent whether extra spending on durable assets is undertaken and financed by loans, or the deficit is simply created by reducing taxes on consumption. The Government is free to decide where the additional expenditure, whether private or public, should be directed according to the principle of social priorities.

EMPLOYMENT IN AUSTRALIA : WAR AND POST-WAR

1. WAR-TIME MOBILISATION.

The mobilisation of man-power for war purposes reached a considerable extent in Australia in 1943 (so considerable, in fact, that in the meantime the process has been partly reversed). This may be seen from figures given in a budget statement by Mr. Chifley in September 1943.[1] The total occupied population (which includes all employees, employers, farmers and the defence forces) had increased by 620,000 from the outbreak of the war to September 1943. Of this, 250,000 were formerly unemployed, 150,000 were accounted for by the natural increase in population and the remainder are " abnormal " war-time supply of labour (women, etc.). 1,370,000 persons or 40% of the occupied population were in the defence forces, and in manufacturing or construction devoted to war production. War employment in manufacturing is given as over 500,000, and about 50,000 were employed by the Allied Works Council (i.e. in defence construction). That leaves about 800,000 for the strength of the defence forces.[2]

TABLE I.

Man-power in Australia (thousands of persons)

	A Occupied Population	B Defence forces + war employment in manufacturing and construction	A—B " Civilian " occupied population
1939	2,750	50*	2,700
1943	3,370	1,370	2,000

* approximate estimate.

From Table I it appears that this mobilisation has involved the withdrawal of about 700,000 persons from normal peace-time pursuits. Turning to Table II we find that among industrial employees (wage and salary earners) 380,000 have been withdrawn from civilian employment. Of the remaining 320,000 withdrawals a certain number were domestic servants and self employed, but a very great proportion were

TABLE II

Employment in Australia (thousands of wage and Salary Earners)

	A Total Employment excl. of Agriculture and Domestic Servants	B Ditto in "1939 Workers"	C War Employment in Manufacturing and Construction	D Civilian Employment (A—C)	E Ditto, in " 1939 Workers"
July 1939	1,730	1,730	—	1,730	1,730
July 1943	1,904	2,050	550	1,350	1,450
Change		+ 320		—380	—280
in %		+18½%			—16%

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[1] Quoted in " The Australian War Economy ", *The Economic Record*, December, 1943, p. 159.

[2] This estimate of the defence forces in 1943 is given directly in the *Statistical Bulletin of the Commonwealth Bank of Australia*, April 1943, p. 56.

rural workers and farmers. It has been stated that 30 per cent of the agricultural labour has been withdrawn from the land, and the number of persons occupied in agriculture was about 600,000 before the war.

The extent of mobilisation for war production in the non-agricultural sector is shown in Table II. It will be noticed that the " war employment " given includes only manufacturing and construction, it thus leaves out the part of the man-power in transport and in the civil service which is indirectly devoted to war production. This must be taken into account in comparisons with other countries which use a more comprehensive concept of war employment.[1]

To estimate the extent of the reduction in the civilian sector we must make some rough assumption as to the increase in weekly hours of labour. We know that this has been considerable and it is therefore not unreasonable to assume an increase of the same magnitude as in Britain, i.e. 7½%[2]. On the basis of this assumption it appears that total industrial employment in terms of 1939 workers (i.e. workers working the same hours as in 1939) has increased by 18% and " civilian employment " has been reduced by about 16%. The latter figure is a considerable understatement, as we must remember that transport workers and civil servants are all included in civilian employment. We can nevertheless see from the figure that the cut in civilian production is quite considerable. Private building has been reduced to negligible proportions, textiles are severely rationed, and great scarcity of durable goods exists.

2. THE LABOUR SUPPLY AFTER THE WAR.

The available figures are sufficient to give at least a rough idea of the amount of employment which will have to be provided if the aim of full employment is to be achieved after the war.

Even immediately before the war Australia had quite a sizeable unemployment (250,000 are 12½% of the industrial labour force, in a relatively " prosperous " period). The " natural " increase in labour supply up to 1944 was 150,000, and will be about 180,000 in the autumn of 1945. If the war would stop then, there would, therefore, be 430,000 people over and above the level of employment in July 1939. This has to be corrected for battle casualties, but they are probably at least offset by the amount of " abnormal " labour supply (e.g. woman labour)

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[1] For the United States, non-agricultural employment in war production in the fourth quarter of 1943 is given by the *Survey of Current Business* (August 1944) as follows (millions of wage- and salary earners) :—

Aircraft, ships, tanks, explosives, etc.	5.2
Raw materials, machinery, food, textiles for war use	6.0
Mining	0.5
Transportation, public utilities, trade and services	1.6
Construction	0.5
Government war agencies	1.5
	15.3

Total non-agricultural employment in the fourth Quarter 1943 was 39.5 million (adjusted for seasonal variation). The war employment comparable with the Australian figure would be 11.7 millions or 30% of total employment, as compared with 29% in Australia.

[2] *Cf.* J. L. Nicholson, Earnings and Hours of Labour, BULLETIN, Vol. 6, No. 7.

which will prove permanent. There is, however, another source of new supply. It is very likely that a part of the rural labour will never return to the land, first because of the still existing wage differential, and second because a considerable mechanisation and increase in productivity per man seems to have taken place in agriculture (without it the considerable withdrawals without corresponding loss in output would have been hardly possible). We can, therefore, safely assume a *minimum* additional labour supply of 430,000, which added to the 1,730,000 employed in 1939 gives 2,160,000. This does not take account of further increases in the population during the Japanese war, or of immigration.

How does this compare with the present employment, in terms of man-hours ? As we may assume that the length of the working week after the war will return to the 1939 level, we must compare the post-war labour force with the present employment in terms of 1939 workers which is 2.05 millions. The postwar employment in terms of man-hours will therefore be somewhat higher than at present.

3. THE NATIONAL INCOME.

We may conclude from the above that the post-war real national income will be considerably greater than the pre-war income. The extent of the rise is difficult to estimate. In 1937—38 net national income was given as £A 814 million by *Clark and Crawford.* It seems to have been much the same, in real terms, in 1939. If we assume that primary production remains on balance unchanged, and the remainder of the national income rises in the same proportion as the industrial employment (i.e. by 25%) we should obtain an increase of £A 150 million at 1937—38 prices. Making allowance for a moderate increase in productivity it would appear that an increase in *real* income of the order of £A 200 millions in terms of 1937—38 prices is not improbable.[1]

4. THE PROSPECTS FOR FULL EMPLOYMENT.

The severity of the cut in civilian production (investment and consumption) leads us to expect that piled-up demand will be rather more, in relation to national income, than in the United States. This is reinforced by the consideration that during the " Japanese phase " of the war Australia as an important supply base will probably experience less relaxation in the war effort than other countries, and there will therefore be little " absorption " of piled-up demand until the end of the Japanese war.

Apart from consumers pile-up the most important sources of demand will be essential public works and housing. With regard to the first there is a plan to spend £A 200 million in the first two post-war years. Building was relatively small in pre-war years, and an appreciable backlog (estimated at 250,000—300,000 dwelling units) has accumulated. It is envisaged that public and private building should provide 50,000 dwelling units in the first year, increasing to 80,000 dwelling units in the fourth year after the war. This compares with a maximum of

[1] In present prices the resulting total real income would be appreciably higher. Wage rates, on the basis of 1937—38, have increased by 32% up to the first quarter of 1944, the cost of living rose by 27% in the same period. This gives only a broad indication of the money value of income to be expected.

30,000—40,000 units annually before the war.[1] Even if the public works and building actually undertaken should fall short of these targets, they would, together with the piled-up demand for consumers' goods and replacements, offer a fair prospect for employment at the start.

An estimate of this piled-up demand and of the length of the transition period is hardly possible, but it is also less interesting than in the case of Britain or U.S. because, as will be shown, the post-war situation in Australia is dominated by the question of the balance of payments and the future population.

The pre-war balance of payments was probably slightly negative on the average:

TABLE III

*Balance of Payments** (*£A millions*)

	Exports	*Imports*	*Gold Production*	*Interest Payments*	*Capital Movement*
1936—37	148.5	113.5	11.3	27.4	+ 8.7
1937—38	141.7	140.0	12.8	27.5	—24.4
1938—39	122.5	124.5	14.6	27.3	—26.0†
1939—40	149.7	144.9	17.7	27.9	—17.0†
1940—41	134.9	136.3	16.4	28.1	—25.0†

* Queensland Yearbook 1941, p. 167.
† Estimate.

At present the balance of payments is active, as shown by the accumulation of sterling balances which, in August 1944, were £A 140 million (£ stg. 110 million) above pre-war level. This favourable balance is largely due to the expenditure of United States forces.

In the post-war period the following factors will change the balance of payments, as compared with the pre-war period: on the basis of pre-war propensity to import the increased real income should increase imports, according to calculations by C. Clark, by about 25% of the additional real income.[2] If we assume, for example, an increase in real income of £A 200 million in 1937—38 prices the *real* imports would increase by £A 50 million in 1937—38 prices, or by more than a third of their level in 1937—38. On the other hand, the war-time industrial development in Australia should make for a reduction in imports, though it would seem that this effect is partly dependent on conversion of equipment and on a conscious policy of developing the new industries.

A second factor are the terms of trade. During the war, they have deteriorated, from the point of view of Australia, owing to her unfavourable geographical position. Their post-war development is uncertain (depending on such factors as the price of wool of which there are big stocks) and little can be said about it with confidence.

Finally, a considerable "abnormal" demand for imports is to be expected in the immediate post-war period, due to the curtailment of imports during the war. This factor, if nothing else, will make the position of the balance of payments difficult in the first post-war years. To solve the problem by drawing on the sterling balances (which may prove impossible owing to scarcity of supplies in Britain) or by loans would be uncautious while the long-term position of the balance of payments is uncertain, and on the face of it, not very favourable.

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[1] Report of the Commonwealth Housing Commission, See *The Economic Record*, June 1944.

[2] *The National Income of Australia.*

The likelihood is therefore that Australia will continue to control imports very strictly after the war, and expand industrial production so as to substitute home produced goods for imports. This may still necessitate certain abnormal imports of capital goods for which loans might be necessary, but in this case a long run improvement of the balance of payments would be the result. The building of new and expansion of existing industries would involve new investment and this will prove an important factor in securing full employment.

This solution is inevitable from another point of view. The traditional immigration policy of Australia is unlikely to survive the shock of this war unscathed. If it will be changed, and the population will increase more quickly than in the past, the balance of payments problem is insoluble without industralisation, because any substantial expansion of agricultural exports is out of the question as a long-run policy. Industrialisation, combined with a faster increase in population would make Australia less dependant on exports of primary products, if agriculture is kept at its present level of production, or increased less than in proportion to the population.

If this twin policy of immigration and industrialisation is adopted, the employment situation in Australia will be rather different from that of the " old " countries, because there will exist the steady need for new investment characteristic of a dynamic system. The question of the methods to be adopted to carry through the industrialisation will, however, be the subject of considerable argument.

J. STEINDL.

FAMILY DIETS AT LOW COST

NOVEMBER 1944

1. THE COST OF A " HUMAN NEEDS " DIET.

Our eighth survey of the weekly cost of a " human needs " diet for a family of five persons[1] was carried out in November of this year. As on previous occasions, the data were collected exclusively in Oxford, and the cost of the diet is based on average prices obtaining in any part of the town. The total cost does not, therefore, strictly represent a minimum. In different shops, the following items could be bought cheaper than listed in Table I (the lowest prices charged are shown in brackets) : bacon (1/6 per lb.) ; jam (1/10 per 2 lb.); tea (2/6 per lb.); dried fruit (figs, 7½d. per lb.); potatoes (6d. per 7 lb.); cooking apples (4d. per lb.); cocoa (1/- per lb.). Since, however, bacon and jam can

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[1] Husband, wife, and 3 children of school age.

TABLE I

Weekly "Human Needs" Diet for a Family of 5 Persons

DIET A

		Quantity		Price p. Unit[1]		Changes since April 1944			
						Quantity	Outlay		
				s.	d.			s.	d.
(a)	RATIONED FOODS								
1	Meat	7℔			10[2]	...	..		
2	Bacon	1℔		1	8	— 4 oz.	—		5
3	Margarine	1℔	14 oz.		9	...	...		
4	Lard		10 oz.		9	...	...		
5	Sugar	3℔	8 oz.		4	...	...		
6a	Jam		4 oz.	1	0	...	...		
6b	Syrup	1℔			8[3]	...	...		
7	Tea		8 oz.	2	8	...	...		
8	Cheese		15 oz.	1	1	+ 5 oz.	+		4
9a	Eggs, shell	1 egg			2	...	...		
9b	*Ditto*, dried	1¼ packet[4]		1	3	...	..		
10	Fish, tinned	2 tins[5]			10	...	...		
11a	Peas and Lentils, split	1℔			5	...	...		
11b	Beans, dried	1℔			6	...	...		
12	Rice and Semolina	1℔			6[2]	...	...		
13	Rolled Oats	2℔	8 oz.		3½	...	...		
14	Dried Fruit[6]		4 oz.		9	— 4 oz.	—		2¼
15	Household Milk	⅝ tin[7]			9	...	...		
	Outlay on Group (a)			*20*	*0½*	...	—		*3¼*
(b)	LIQUID MILK								
16a	Ordinary	14 pt.			4½	...	...		
16b	School	5 pt.			1½	...	...		
	Outlay on Group (b)			*5*	*10½*	...	...		
(c)	UNRATIONED CARBOHYDRATE FOODS								
17	Bread	17℔			2¼	...	...		
18	Flour	2℔	8 oz.		2¾	...	+		1
19	Potatoes	33℔			1	...	...		
	Outlay on Group (c)			*6*	*6½*	...	+		1
(d)	VEGETABLES (*exc. Potatoes*)								
20a	Carrots and Turnips	7℔			1¾[2]	...	—		1¾
20b	Cabbage	7℔			3		—		10½
	Outlay on Group (d)			*2*	*9¼*	...	—	*1*	*0¼*
(e)	OTHER FOODS								
21	Cooking Apples	1℔			6	+ 1℔	+		6
22	Cocoa	4 oz.		1	2	...	—		0½
23	Condiments	...			4	...	...		
	Outlay on Group (e)			*1*	*1½*		+		*5½*
	Total Outlay on Diet A			**36**	**4¼**		—		**9**

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[1] Dried eggs, price per packet ; eggs in shell, price per egg ; household milk, price per tin ; other milk, price per pint ; tinned fish, price per tin ; condiments, total outlay ; all other food, price per ℔.

[2] Average price.

[3] Bought in 2℔ container.

[4] One packet equivalent to 12 eggs.

[5] One tin contains 15 oz. net weight.

[6] Sultanas, raisins, figs, or dates.

[7] One tin equivalent to 4 pints of liquid skimmed milk.

only be obtained from the retailer with whom the housewife has registered for them, she must accept what that retailer is able to offer her. The purchase of the other items is more a matter of choice, but the prices for most of them varied from shop to shop, and in several instances the fact that the cheaper qualities were in stock was not obvious and could only be elicited by enquiring for them.

The changes in the diet since our survey in April are small. A substantial reduction had occurred in the price of cabbage, from 4½ pence per lb. to 3 pence. Two additions to the diet are 5 ounces of cheese, owing to the increase in the cheese ration from 2 ounces to 3 ounces per person per week, and 1 lb. of cooking apples. In compensation, we have omitted 4 ounces of bacon and 2 ounces of dried fruit. As to the rise in the cost of flour shown in Table I, there was no change in the controlled maximum price ; but while in April it was possible to buy bags of 3 lb. at 7½ pence, in November the charge seemed to be everywhere 8½ pence. In consequence of these changes, the total cost of our " human needs " diet has decreased by 9 pence since April.

2. The Concept of Human Needs.

The diet given in Table I does not include all the weekly rations for a family of 5 persons. The following additional purchases would be possible : tea, 2 ounces ; bacon, 4 ounces ; dried eggs, 1¼ packet (increasing the allowance of 16 eggs in our diet by a further 15 eggs). There are also 2 or 3 points left over.[1] If the housewife buys another 4 ounces of dried fruit, she will require for it 2 points ; the cost—2¼ pence—might be saved on some other item, e.g. by buying more of the cheaper kind of potatoes. Since the 3 children of the family would not need a full tea ration each, the remaining 2 ounces of tea may be deemed a luxury and hence disregarded.[2] But with respect to the bacon and dried eggs it could be objected that although from a purely nutritional view-point they may not be essential for the diet, the full rations ought to be included in it. Moreover, to say that a family could buy all the items enumerated in Table I, at the prices stated, does not, of course, mean that the average family with a low income is likely to do so. In particular, our average price of meat of 10 pence per lb. only allows the family stewing meat, which runs counter to the deep rooted habit of serving a Sunday " joint." The family outlay on meat cannot be more than 5 shillings 10 pence, which represents the weekly rations for 5 persons. But if the housewife buys dearer meat she will have a smaller quantity and therefore want some other foods, such as sausages, fish, or, even, some more dried eggs, to make good the shortage. In order to be able to purchase these she would have to economize elsewhere, and most probably would buy fewer vegetables, except potatoes.

Yet it is necessary here to guard against a misconception as to the primary purpose of our diet as shown in Table I. It is intended to supply a standard figure of total cost that will serve for ascertaining the change since the last pre-war year (1938) in the minimum cost of a diet providing a satisfactory nutritional intake for a family of fixed composition. Our starting point was the " human needs " diet compiled by Mr. S. Rowntree in 1936.[1] The considerable modifications that have been introduced in our war-time schedules are due, first, to the restrictions on the selection of foods resulting from shortages and rationing, and, secondly, to the advance since 1936 in the general knowledge of nutritional requirements of individuals and the nutritional composition of foods. This second point is reflected in the substantially higher indices of nutrients of our diet,[2] as compared with Mr. Rowntree's, which are given in Table VII.

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[1] The foods in Table I that are rationed on points are : Nos. 6b, 10, 11a and b, 12 (rice), 13, 14. Semolina, which is listed with rice, is unrationed.

3. A DIET AT LOW COST.

If, however, we allow for the purchase of all the rations (except tea), we get a closer approach to a low cost diet that would satisfy nutritional needs and, at the same time, fit in with general habits. In Table II we have made the requisite modifications of our minimum diet A. The average price of meat has been raised to 1 shilling per lb., which reduces the total quantity bought by 1 lb. 3 ounces. Against this are set 4 ounces of bacon and another 1¼ packet of dried eggs. Since the dried eggs would help to provide breakfast dishes we have also slightly reduced the amount of rolled oats. The additional outlay on this diet B, as compared with diet A, shown in Table I, would be 1 shilling 11 pence. The increase would not be very different if the housewife chose to replace part of the dried eggs, or all of them, by sausage meat or cheap fish (herrings, mackerels, kippers, frozen cod), leaving the content of animal protein of the diet approximately the same. If she buys sausage meat, half beef and half pork, costing on the average 10 pence per lb., about two ounces could be substituted for a dried egg, and the outlay

TABLE II

Weekly Low Cost Diet for a Family of 5 Persons.

DIET B

	Quantity	Outlay s.	d.
Diet A	...	36	4¼
Excluding :			
Meat	1lb 3 oz.		...[1]
Rolled Oats	4 oz.		0¾
(—)			0¾
Including:			
Bacon	4 oz.		5
Eggs, dried	1¼ packet	1	6¾
(+)		1	11¾
Total Outlay on Diet B		**38**	**3¼**

[1]See below.

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[1] S. Rowntree, *The Human Needs of Labour* (New Edn., 1937).

[2] They are about the same for our eight diet schedules from April 1941 to November 1944.

would remain practically unchanged. Of fish 1½ to 2 ounces might suffice, and the savings effected might amount to a farthing for each egg thus replaced. Since cheap fish and sausage meat are not always available, to buy dried eggs certainly makes shopping easier. From Tables IV and V it will be seen that the amounts of main nutrients supplied by diets A and B are very nearly the same.

4. EXPENDITURE AND NUTRITIONAL INTAKE.

Perhaps the most striking fact as regards the "human needs" diet for November 1944 is the high percentage of the total outlay spent on rationed and quasi-rationed foods, *viz.* groups (*a*) and (*b*) in Tables I and III. These two groups account for over 71 per cent. of the total expenditure. They provide all the animal protein, 23 per cent. of the vegetable protein, about 55 per cent. of the calories, 70 per cent. of the calcium, and 45 per cent. of the iron of the diet. The main cheap calorific foods are comprised in group (*c*), while group (*d*) supplies essential minerals and—what is not shown by us—vitamins.[1]

TABLE III

Relative Outlay on and Nutritional Intake[1] *from Diet A*

	Outlay	Calories	Protein		Calcium	Iron
			Animal	Vegetable		
Group (a)	55.1	45.9	72.2	22.8	28.0	43.1
Group (b)	16.2	8.6	27.8	...	41.7	1.6
Group (c)	18.0	43.4	...	70.3	22.3	47.2
Group (d)	7.6	1.3	...	5.4	7.6	5.3
Group (e) *excl. Condiments*	2.2	0.8	...	1.5	0.4	2.8
Condiments	0.9	...	...	...	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0

[1] Based on Ministry of Health data of nutritional values.

The relative distribution of proteins, calcium, and iron, in the individual items of the diet, is surveyed in Tables IV and V. The two outstanding foods in these groups of nutrients are milk and bread, the former being an important source of animal protein and the main source of calcium, and the latter leading as regards vegetable protein and iron. In consequence of the addition of calcium to all national flour, bread and flour have also become valuable sources of calcium. Even so, the calcium intake provided by our "human needs" diet still falls nearly 25 per cent. short of optimum requirements according to the Ministry of Health scale, as can be seen from the data in Tables VI and VII. As regards the intake of protein and iron, the diet provides a generous margin of safety. In order to arrive at the optimum intake of calcium it would be necessary to add another 2 pints of milk, or its equivalent in cheese, to the daily diet of the family, on the assumption that the largest share of both these foods will be consumed by the

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[1] Vitamin C in cabbage and turnips, and carotene (vitamin A) in carrots.

TABLE IV

Major Sources of Protein in 'Human Needs' Diet for Persons

	Animal Protein			Vegetable Protein	
	Diet A	Diet B		Diet A	Diet B
	%	%		%	%
Meat	35.9	29.3	Bread and Flour	54.4	54.9
All Milk[1]	31.5	31.1	Poratoes	15.9	16.1
Fish	13.1	12.9	Dr. Legumes[2]	12.2	12.3
Cheese	8.6	8.4	Rolled Oats	8.9	8.1
All Eggs	7.3	13.9	Vegs. excl. Potatoes	5.4	5.4
Bacon	3.4	4.2	Rice and Semolina	1.5	1.5
Margarine	0.2	0.2	All other foods	1.7	1.7
Total	100.0	100.0	Total	100.0	100.0
Intake per "Man" per Day	*41 gm.*	*42 gm.*	*Intake per " Man " per Day*	*53 gm.*	*53 gm.*

[1] Including Household milk. [2] Peas, lentils, beans.

TABLE V

Major Sources of Calcium and Iron in' 'Human Needs ' Diet for 5 Person

	Calcium			Iron	
	Diet A	Diet B		Diet A	Diet B
	%	%		%	%
All Milk[1]	47.4	46.9	Bread and Flour[2]	30.6	30.8
Bread and Flour[2]	18.9	18.7	Meat	17.6	14.7
Cheese	10.8	10.7	Potatoes	16.6	16.7
Vegs. excl. Pot.	7.6	7.5	Dr. Legumes[3]	8.5	8.6
Potatoes	3.4	3.4	Rolled Oats	6.3	5.7
Fish	3.1	3.1	Vegs. excl. Pot.	5.3	5.3
Dr. Legumes[3]	2.4	2.4	All Eggs	3.3	6.4
Rolled Oats	2.2	2.0	Fish	2.8	2.8
All Eggs	1.4	2.6	Cocoa	2.6	2.6
Syrup	0.7	0.7	All Milk[1]	1.9	1.9
All other foods	2.1	2.0	All other foods	4.5	4.5
Total	100.0	100.0	Total	100.0	100.0
Intake per " Man " per Day	*0.6gm.*	*0.6gm.*	*Intake per " Man " per Day*	*17mgm.*	*17mgm.*

[1] Inc. Household milk. [2] Calcium fortified. [3] Peas, lentils, beans.

TABLE VI

Nutritional Requirements and Intake from " Human Needs " Diet A

	Ministry of Health Scale					Institute Scale		
" Man"	Calories	Protein		Calcium	Iron	Calories	Protein	
Value of Family	3.73	4.43		7.13	5.40	3.75	3.75	
Per " Man " per Day[1]								
(a) Requirements	3000	70 gm.		0.8 gm.	10mgm.	3300	100 gm.	
(b) Intake from "Human Needs "		*animal*	*vegetable*				*animal*	*vegetable*
Diet A	3000	41gm.	53gm.	0.6gm.	17mgm.	3300	52gm.	52gm.

[1]Net values for the Ministry of Health data, gross values for the Institute data; in the latter scale, the content of protein of war-time bread is underestimated.

children;[1] this would raise the total milk intake of the family to 35½ pints per week—including the dried household milk and the children's milk at school. In peace time, few families were in the habit of consuming such quantities of milk, and at present so large an amount is not available.

In this present survey, all the calculations of nutritional values and requirements are based primarily on data supplied to us by the Ministry of Health and embodying results of the most recent researches. These data were not available when, in Spring 1941, this series of surveys was started, and in order to facilitate comparisons with our previous papers we have included in Table VI the relevant figures based on our old scales of requirements and nutritional values.

5. War Time Changes in Cost.

TABLE VII

Indices of Cost and Nutrients of 'Human Needs' Diet, Pre-war and November 1944

	Outlay	Calories	Protein		Calcium	Iron
			Total	Animal		
Pre-war :						
S. Rowntree, 1936	100[1]	100	100	100	100[2]	100
November, 1944						
" Human Needs " Diet A	153	111	110	111	116	103
Ditto, less 6½ pt. milk	143	108	105	100	100	103
Ministry of Health Requirements	...	109	81	...[3]	149	61

[1] Based on Ministry of Labour index for 1938.
[2] All bread and flour assumed to be calcium fortified. [3]Not stated.

From Table VII it appears that our " human needs " diet in November 1944 cost 53 per cent. more than the diet that Mr. S. Rowntree compiled in 1936,[2] if the outlay on his diet is adjusted for the consumption of bought bread instead of home baked bread and for the average changes in food prices from 1936 to 1938—the last pre-war year.[3] In Table VIII, the complete series of indices of our war-time " human needs "

TABLE VIII.

Weekly Cost of a " Human Needs " Diet for 5 Persons

	1941	1942	1943	1944
	s. d.	s. d.	s. d.	s. d.
April	33 0	34 0	34 11¾	37 1¼
November	32 10¾	33 2¾	35 6¾	36 4¼
	Indices (Average Cost[1] 1938 = 100)			
April	*139*	*143*	*147*	*156*
November	*138*	*140*	*150*	*153*

[1] Calculated for Mr. Rowntree's diet for 1936.

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[1] The " man " values given by the Ministry of Health for the calcium requirements of our standard family are : 2 adults, 1.00 each ; 1 child, 7 years, 1.63 ; 2 children over 7 years, 1.75 each ; making a total of 7.13 " men ".

[2] Mr. Rowntree obtained his prices from the cheapest shops in the East End of London, High Wycombe, and York.

[3] In accordance with changes in the Ministry of Labour index of food prices, which, on the average, stood at 130 in 1936 and 140½ in 1938, as compared with 100 on July 1st, 1914.

diet has been calculated on the same basis. The figures of nutritional intake in Table VII suggest, however, that the higher cost of our " human needs " diet, as compared with Mr. Rowntree's, is accompanied by substantial improvements in diets. It should particularly be noted that for the calculation of these figures we have applied the same scales of nutritional values to both diets, and have even assumed that at both dates all flour and bread were calcium fortified. The indices of animal protein and calcium—the two nutrients that derive largely from a fairly expensive food, *viz.* milk—can be reduced to Mr. Rowntree's level of nutritional intake by excluding from diet A, as shown in Table I, 6½ pints of fresh milk ; this would still allow the family 12½ pints of full cream milk and 2½ pints of skimmed, as against 14 pints of tinned skimmed milk in Mr. Rowntree's diet. The index of outlay would then fall from 153 to 143.[1] A similar reduction, of about 6 to 6½ per cent., should be applied to all the indices in Table VIII, if the nutritional intake is to be brought more closely into line with that of the basic diet.

The " corrected " increase, shown in Table VII, by 43 per cent., since 1938, may be taken to reflect, first, the general rise in the price of food, secondly, the levelling up of the prices of the cheapest foods, and, lastly, the enforced substitution, through rationing and war-time restrictions, of relatively more expensive for cheaper foods. During this same period, the Ministry of Labour index of food prices rose from 100 to 120.

T. SCHULZ.

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[1] Taking the cost of a pint of milk as 4½d.